REMARKS

Claims 30-51 are present in this application. Claims 30, 34, 41, 50 and 51 are independent. Claims 48 and 49 are presently withdrawn.

Interview

The Examiner is thanked for conducting the Interview on February 22, 2003. It is believed that as a result of the Interview, prosecution has been advanced toward resolving issues in the pending application. Claim amendments made in this Amendment reflect discussion that took place during the Interview. Accordingly, Applicants solicit an early indication of allowance for the present application.

Claim Rejection - 35 USC 112

Claims 34-47 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite (note that the Office Action states that claims 34-45 are rejected).

Applicants have amended claims 34 and 41 accordingly. Applicants respectfully request that the rejection be reconsidered and withdrawn.

Claim Rejection - 35 USC 102

Claims 30-47, 50 and 51 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,359,877 ("Rathonyi") in view of Wicker, Stephen B., "Error Control Systems for Digital Communication and Storage," Prentice Hall (1995), pp. 408-423. Applicants respectfully traverse this rejection.

Claims 30, 34, 41, 50, and 51

Claim 30, in a preferred embodiment, is directed to a communications method for a communication system having a transmitting end and receiving end, in which a payload of a data packet is composed of a plurality of error correction blocks, each error correction block having a block-type error correction code, comprising the steps of:

performing error correction decoding for each of said plurality of error correction blocks in said data packet at a receiving end;

transmitting an error correction state of each of said error correction blocks from said receiving end to a transmitting end; and

extending the size of the payload of a packet to be transmitted next or subsequently from the transmitting end by adding an error correction block, a retransmission of which has

been requested, to the error correction blocks in the data packet to be transmitted next or subsequently, thereby increasing the number of error correction blocks in the data packet to be transmitted next or subsequently.

Applicants submit that Rathonyi fails to teach or suggest at least the steps recited in claim 30, including, "performing error correction decoding for each of said plurality of error correction blocks in said data packet at a receiving end" and "transmitting an error correction state of each of said error correction blocks from said receiving end to a transmitting end".

Rathonyi

Rathonyi discloses a communication system that minimizes overhead in packet re-transmission. In particular, the communication system takes advantage of the excess overhead that exists in higher transmission rate transmissions (see column 5, lines 11-25), in the case of variable transmission rates.

The Rathony reference discloses three embodiments. The first two embodiments are directed to an ARQ scheme (see column 4, lines 25-35) and the third embodiment uses a Type II hybrid ARQ scheme (see column 6, lines 38-40, 58-63). The third embodiment is disclosed as using a transmission block that only contains one packet in order to increase the probability of successful decoding (column 14, lines 22-30).

Differences over Rathonyi

The Office Action states that the claimed step of "performing error correction decoding for each of said plurality of error correction blocks in said data packet at a receiving end" is met by Rathonyi at column 14, lines 22-41 (i.e., Rathonyi's third embodiment), in combination with Wicker's Figure 15-14 (Office Action, page 5).

The Office Action states that the claimed step of "adding a block, a retransmission of which has been requested, to a block in a data packet to be transmitted next or subsequently from the transmitting end, thereby increasing a number of blocks in the data packet for transmission" is met by Rathonyi at column 9, lines 44-51 and Fig. 3C (i.e., Rathonyi's first embodiment, which, for example, shows adding a packet 3 to a packet 9). (Office Action, statement bridging pages 4 and 5).

In the present invention, the transmitting end of a communication system is capable of retransmitting an error correction block, of a plurality of error correction blocks transmitted in a previous data packet, together with error correction blocks in a data packet to be transmitted next. Thus, the present invention can retransmit a portion of blocks from a data packet previously transmitted, for blocks that had been determined to be undecodable. In other words, the present invention

does not require an entire data packet to be retransmitted, if retransmission is requested by the receiving end.

In addition, the present invention includes a data packet that has an open field such that if retransmission is requested for a block, the requested block can be retransmitted in the open field of the next data packet. Thus, there is an open field enabling the payload to be increased up to full capacity of the data packet for adding a requested retransmission block.

On the other hand, Applicants submit that Rathonyi's first embodiment shown in Figures 3C and 3D fails to teach requesting retransmission of an error correction block of a plurality of error correction blocks received in a data packet. Furthermore, Applicants submit that Rathonyi's Figure 3C fails to teach adding the error correction block (of the plurality of error correction blocks of the payload of a previously received data packet), requested for retransmission, to the error correction blocks in a data packet to be transmitted next or subsequent.

This argument applies as well to claims 34, 41, 50, and 51. Applicants submit that the rejection fails to establish *prima facie* obviousness and respectfully request that the rejection be reconsidered and withdrawn.

Claim 31

Claim 31 is directed to wherein the data packet to be transmitted contains a retransmission-block field, in which the field is not used in an ordinary state where there is no retransmission request. For example, present Figure 1 shows data packet P(1) as transmitting six error correction blocks, with the field for a seventh block being empty. Packet P(3) shows the retransmission-block field being used by a retransmitted block. Applicants submit that Rathonyi fails to teach or suggest at least the claimed "retransmission-block field."

Claims 32 and 33

Further with respect to claims 32 and 33, Applicants submit that Rathonyi fails to teach or suggest at least the claimed, "wherein said error correction state of each error correction block includes identification information of a block that is most lately outputted from said transmitting end, among blocks received by said receiving end." In the present invention, as can be seen in Figure 16 for example, the leaf station transmits a retransmission request packet A(1) that includes tag information "106" of the block most recently received. Applicants submit that Rathonyi's NAK (of Figure 3) does not include identification information of a block that is most lately outputted from the transmitting end. Furthermore, Applicants submit that Rathonyi's NAK does not include a number of

blocks for which error-correction decoding has finished (e.g., Figure 18 shows "4" as the number of blocks that have been error-corrected decoded in packet P(1)). Accordingly, for at least these reasons, Applicants submit that Rathonyi fails to teach each and every element of claims 32 and 33.

Based on the above reasons, Applicants respectfully request that the rejection be reconsidered and withdrawn.

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert W. Downs (Reg. No. 48,222) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of $120.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees

required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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